

24



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/678,296	10/03/2000	Toru Koizumi	35.C14851	5740

5514 7590 06/02/2005

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

AGGARWAL, YOGESH K

ART UNIT	PAPER NUMBER
----------	--------------

2615

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/678,296

Applicant(s)

KOIZUMI, TORU

Examiner

Yogesh K. Aggarwal

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/25/2005 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 31, 33, 34, 35, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guidash (US Patent # 6,624,850) in view of Barna et al. (US Patent # 6,452,666).

[Claim 31]

Guidash teaches a method of driving a solid image pickup device comprising a photoelectric conversion unit (figure 1, element PD), a charge-voltage conversion unit (figure 1, element FD) for converting electric charges from the photoelectric conversion unit into voltage signals, a signal amplification means (figure 1, element SIG) for amplifying the voltage signals generated in the charge-voltage conversion unit, and a charge transfer means (figure 1, element TG) for

Art Unit: 2615

transferring photoelectric charges from the photoelectric conversion unit to the charge-voltage conversion unit (figure 1, element FD).

Guidash fails to teach performing a primary transfer operation of transferring a part of the photoelectric charges accumulated in the photoelectric conversion unit during a charge accumulation period, from the photoelectric conversion unit to the charge-voltage conversion unit and performing at least one other transfer operation prior to a subsequent charge accumulation period, to transfer remaining photoelectric charges from the photoelectric conversion unit to the charge-voltage conversion unit, wherein the photoelectric conversion unit is not reset prior to the at least one other transfer operation.

However Barna et al. teaches in figure 4B a first readout operation (Sample (1)) from a photoelectric conversion unit to the charge-voltage conversion unit (38) and performing at least one other transfer operation (SAMPLE (2)) prior to a subsequent charge accumulation period (col. 5 line 62-col. 6 line 2). These two transfer operations are conducted during the accumulation period (col. 7 lines 46-52, figure 11). The photoelectric conversion unit is not reset (PIX_RESET) prior to the at least one other transfer operation but during the start of the accumulation period.

Therefore taking the combined teachings of Guidash and Barna, it would have been obvious to one skilled in the art to have been motivated to have a primary transfer operation of transferring a part of the photoelectric charges accumulated in the photoelectric conversion unit during a charge accumulation period, from the photoelectric conversion unit to the charge-voltage conversion unit and performing at least one other transfer operation prior to a subsequent charge accumulation period, to transfer remaining photoelectric charges from the photoelectric

Art Unit: 2615

conversion unit to the charge-voltage conversion unit, wherein the photoelectric conversion unit is not reset prior to the at least one other transfer operation in order to remove all the charges with great accuracy from the pixel.

[Claim 33]

Guidash '850 teaches an intermediate readout operation by performing the resetting of the charge-voltage conversion part and reading out output signals amplified by the amplification means to the signal output line (col. 3 line 33-col. 4 line 23, figure 3b).

[Claim 34]

Claim 34 is an apparatus claim corresponding to method claim 31. Therefore it has been analyzed and rejected based on method claim 31.

[Claim 35]

Guidash discloses an embedded type photodiode used for photoelectric conversion unit (figure 1, PD).

[Claims 36 and 37]

Guidash in view of Barna teach the solid-state image pickup device of claim 34 and a signal processing circuit for processing output signals from the solid image pickup device (figure 1, element 14 in Barna). Barna also teaches that the APS to be used in a digital still camera having a shutter defining the integration time which inherently has an optical system for focusing a ray of light to the solid-state image pickup device and a mechanical shutter (col. 1 lines 28-32).

4. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guidash (US Patent # 6,657,665), Barna et al. (US Patent # 6,452,666) and in further view of Merrill (US Patent # 5,892,541).

Art Unit: 2615

[Claim 32]

Guidash in view of Barna teach the limitations of claim 31 but fails to teach wherein the output signals readout from the charge-voltage conversion unit obtained by the division and the readout are individually retained and a horizontal scan is carried out after adding the output signals or while adding the output signals. However Merrill teaches wherein the output signals readout from the charge-voltage conversion unit obtained by the division and the readout are individually retained (col. 8 lines 51-54) and a horizontal scan is carried out after adding the output signals or while adding the output signals (col. 9 lines 30-36).

Therefore taking the combined teachings of Guidash, Barna and Merrill it would have been obvious to one skilled in the art to have been motivated to have signals readout from the charge-voltage conversion unit obtained by the division and the readout are individually retained and a horizontal scan is carried out after adding the output signals or while adding the output signals in order to increase the dynamic range.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K. Aggarwal whose telephone number is (571) 272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Groody can be reached on (571) 272-7950. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2615

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YKA

May 25, 2005

Reviewer:

A handwritten signature in black ink, appearing to read 'Lin Ye', with a long horizontal flourish extending to the right.

Lin Ye

Examiner

Art Unit 2615